

## **REMARKS**

### **Summary of Office Action and this Response**

All the claims have been rejected under the judicially created Doctrine of Obviousness Type Double Patenting as being unpatentable over claims 1-48 of U.S. Patent No. 6,677,422 in view of Dankworth et al. (U.S. Patent No. 5,650,536) and E. Bruce Nauman ("Chemical Reactor Design, Optimization, and Scaleup", McGraw-Hill 2002). Claim 104 has been rejected under 35 U.S.C. 103 over the three references mentioned above and additionally the Jarvis et al. patent (U.S. Patent No. 4,728,701).

### **Amendment to the Claims**

Claim 82 has been amended to clarify the meaning of element (d), namely, by having substantially no air or vapor space in the reactor, the reactor is hydrolytically full. See paragraphs [0038] and [0039] of the specification.

Reconsideration of the above rejections in view of this response is respectfully requested.

In connection with the double patenting rejection, the claims of U.S. Patent No. 6,677,422 (Coca et al. patent) are compared with the claims of the present invention. Also, the skill of the art as considered by the secondary references must be taken into consideration.

Although the claims of the Coca et al. patent relate to a process for polymerizing olefinic monomers, such as the isobutylene-type monomers, and a STR is used for the polymerization, there is no disclosure or suggestion in the claims of the Coca et al. patent of a process for making the polymer in which the STR is hydrolytically full during the process.

The Dankworth et al. patent (U.S. Patent No. 5,650,536) relates to a continuous process for functionalizing polymer in which the polymer is reacted with carbon monoxide and a so-called nucleophilic trapping agent in the presence of an acid catalyst. This results in the formation of the carboxylic acid or ester-containing polymer depending upon the choice of the nucleophilic trapping agent. Dankworth does not disclose a process for preparing polymers in which a mixture of olefins is polymerized with one another as required by applicants' claims. Rather, in Dankworth et al., a polymer is reacted with carbon monoxide. Also, there is no disclosure in Dankworth et al. of maintaining the STR hydrolytically full such that there is substantially no air or vapor space in the reactor. The disclosure in Dankworth et al. that the STR is operated in a substantial absence of air and a constant liquid level is not an indication that the reactor is hydrolytically full. In fact, the contrary appears so. Evidence of this can be

seen in the working examples of Dankworth et al., specifically Examples A and B which clearly indicate the presence of a vapor space in the reactor. Since Dankworth et al. is using gaseous carbon monoxide, the carbon monoxide gas fills the vapor space of the reactor such that there is a substantial absence of air. Further, constant volume does not indicate that the STR is hydrolytically full. As shown in Example B of Dankworth et al., only 60% of the volume is reactive liquid.

Also, the E. Bruce Nauman reference does not overcome the deficiencies associated with the above two references. This reference merely discloses the benefits of a series of continuous stirred reactors. Therefore, it is requested that the double patenting rejection associated with claims 82-121 be withdrawn.

With regard to the rejection of the claims under 35 U.S.C. 103 over the same combination of references mentioned above, the above arguments are equally applicable. There is no disclosure in the Coca et al. patent of maintaining the STR hydrolytically full. This missing disclosure is not found in the secondary references. Therefore, even if Coca et al. was modified as suggested by Dankworth et al. and E. Bruce Nauman, applicants' claims would still not be met.

The Jarvis et al. reference has been cited as being pertinent to claim 104 wherein a back pressure control valve is positioned on an outlet. However, there is no teaching in Jarvis et al. of conducting a polymerization in an STR that is hydrolytically full.

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**CONCLUSION**

Based on the above remarks, it is believed that applicants' claims as presently presented are patentable over the prior art of record and an early and favorable response to this amendment is respectfully requested. If the Examiner feels that there are any issues unresolved, he is urged to contact applicants' Pittsburgh attorney at 412-496-3430.

Respectfully submitted,

A handwritten signature in cursive script, reading "William J. Uhl", is written over a horizontal line.

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